

What is claimed is:

1. A data preprocessor for preprocessing input electronic commerce data for a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated with a portion of the input electronic commerce data, comprising:

5 an input buffer for receiving and storing the input electronic commerce data, the input electronic commerce data associated with at least two of the inputs being on different time scales relative to each other;

10 a time merge device for selecting a predetermined time scale and reconciling the input electronic commerce data stored in the input buffer such that all of the input electronic commerce data for all of the inputs are on the same time scale; and

15 an output device for outputting the electronic commerce data reconciled by the time merge device as reconciled electronic commerce data, said reconciled electronic commerce data comprising the input electronic commerce data to the non-linear model.

2. The data preprocessor of claim 1, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained;

20 wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said reconciled electronic commerce data comprise reconciled training electronic commerce data including reconciled target input electronic commerce data and reconciled target output electronic commerce data, and wherein said reconciled target input electronic commerce data and reconciled target output electronic commerce data are both based on a common time scale; and

25 wherein the non-linear model is operable to be trained according to a predetermined training algorithm applied to said reconciled target input electronic commerce data and said reconciled target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the target

input electronic commerce data.

3. The data preprocessor of claim 1, wherein the non-linear model comprises a
non-linear model having a set of model parameters defining a representation of the
5 electronic system system, wherein said model parameters of said non-linear model have
been trained to represent said electronic commerce system;

wherein the input electronic commerce data comprise run-time electronic commerce
data, and wherein said reconciled electronic commerce data comprise reconciled run-time
electronic commerce data; and

10 wherein the non-linear model is operable to receive said reconciled run-time
electronic commerce data and generate run-time output electronic commerce data, wherein
said run-time output electronic commerce data comprise one or both of control parameters
for said system and predictive output information for said system.

15 4. The data preprocessor of claim 3, wherein said control parameters are usable
to determine control inputs to said system for run-time operation of said system.

5. The data preprocessor of claim 1, wherein the input electronic commerce
data associated with at least one of the inputs has missing electronic commerce data in an
associated time sequence and said time merge device is operable to reconcile said input
20 electronic commerce data to fill in said missing electronic commerce data.

25 6. The data preprocessor of claim 1, wherein the input electronic commerce
data associated with a first one or more of the inputs has an associated time sequence based
on a first time interval, and a second one or more of the inputs has an associated time
sequence based on a second time interval; and

30 wherein said time merge device is operable to reconcile said input electronic
commerce data associated with said first one or more of the inputs to said input electronic
commerce data associated with said second one or more of the inputs, thereby generating
reconciled input electronic commerce data associated with said at least one of the inputs
having an associated time sequence based on said second time interval.

7. The data preprocessor of claim 1, wherein the input electronic commerce data associated with a first one or more of the inputs has an associated time sequence based on a first time interval, and wherein the input electronic commerce data associated with a second one or more of the inputs has an associated time sequence based on a second time interval; and

5 wherein said time merge device is operable to reconcile said input electronic commerce data associated with said first one or more of the inputs and said input electronic commerce data associated with said second one or more of the inputs to a time scale based on a third time interval, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs and said second one or more of the inputs having an associated time sequence based on said third time interval.

10 8. The data preprocessor of claim 1, wherein the input electronic commerce data associated with a first one or more of the inputs is asynchronous, and wherein the input electronic commerce data associated with a second one or more of the inputs is synchronous with an associated time sequence based on a time interval; and

15 20 wherein said time merge device is operable to reconcile said asynchronous input electronic commerce data associated with said first one or more of the inputs to said synchronous input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs, wherein said reconciled input electronic commerce data comprise synchronous input electronic commerce data having an associated time sequence based on said time interval.

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9. The data preprocessor of claim 1, wherein said input buffer is controllable to arrange the input electronic commerce data in a predetermined format.

30 10. The data preprocessor of claim 9, wherein the input electronic commerce data, prior to being arranged in said predetermined format, has a predetermined time reference for all electronic commerce data, such that each piece of input electronic

commerce data has associated therewith a time value relative to said predetermined time reference.

11. The data processor of claim 1, wherein each piece of electronic commerce data has associated therewith a time value corresponding to the time the input electronic commerce data was generated.

12. The data processor of claim 1, further comprising:

5 a pre-time merge processor for applying a predetermined algorithm to the input electronic commerce data received by said input buffer prior to input to said time merge device.

10 13. The data processor of claim 12, wherein each piece of electronic commerce data has associated therewith a time value corresponding to the time the input electronic commerce data was generated.

15 14. The data processor of claim 12, further comprising:

an input device for selecting said predetermined algorithm from a group of available algorithms.

20 15. The data processor of claim 1, wherein said output device further comprises a post-time merge processor for applying a predetermined algorithm to the electronic commerce data reconciled by said time merge device prior to output as said reconciled electronic commerce data.

25 16. The data processor of claim 15, further comprising:

an input device for selecting said predetermined algorithm from a group of available algorithms.

30 17. The data processor of claim 1, wherein the input electronic commerce data comprise a plurality of variables, each of the variables comprising an input variable

with an associated set of electronic commerce data wherein each of said variables comprises an input to said input buffer; and

wherein each of at least a subset of said variables comprises a corresponding one of the inputs to the non-linear model.

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18. The data preprocessor of claim 17, further comprising:

a delay device for receiving reconciled electronic commerce data associated with a select one of said input variables and introducing a predetermined mount of delay to said reconciled electronic commerce data to output a delayed input variable and associated set of delayed input reconciled electronic commerce data.

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19. The data preprocessor of claim 18, wherein said predetermined amount of delay is a function of an external variable, the data preprocessor further comprising:

means for varying said predetermined amount of delay as a function of said external variable.

20. The data preprocessor of claim 18, further comprising:

means for learning said predetermined delay as a function of training parameters generated by the electronic commerce system modeled by the non-linear model.

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21. The data preprocessor of claim 1, further comprising:

a graphical user interface (GUI) which is operable to receive user input specifying one or more electronic commerce data manipulation and/or reconciliation operations to be performed on said input electronic commerce data.

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22. The data preprocessor of claim 21, wherein said GUI is further operable to display said input electronic commerce data prior to and after performing said manipulation and/or reconciliation operations on said input electronic commerce data.

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23. The data preprocessor of claim 21, wherein said GUI is further operable to receive user input specifying a portion of said input electronic commerce data for said

electronic commerce data manipulation and/or reconciliation operations.

24. A data preprocessor for preprocessing input electronic commerce data for a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated with a portion of the input electronic commerce data, comprising:

an input buffer for receiving and storing the input electronic commerce data, the input electronic commerce data associated with at least two of the inputs being on different independent variable scales relative to each other;

10 a merge device for selecting a predetermined independent variable scale and reconciling the input electronic commerce data stored in the input buffer such that all of the input electronic commerce data for all of the inputs are on the same independent variable scale; and

15 an output device for outputting the electronic commerce data reconciled by the merge device as reconciled electronic commerce data, said reconciled electronic commerce data comprising the input electronic commerce data to the non-linear model.

20 25. The data preprocessor of claim 24, wherein the non-linear model comprises a non-linear model having a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained;

wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said reconciled electronic commerce data comprise reconciled training electronic commerce data including reconciled target input electronic commerce data and reconciled target output electronic commerce data, and wherein said reconciled target input electronic commerce data and reconciled target output electronic commerce data are both based on a common independent variable scale; and

25 30. wherein the non-linear model is operable to be trained according to a predetermined training algorithm applied to said reconciled target input electronic commerce data and said reconciled target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce

system that generated the target output electronic commerce data in response to the target input electronic commerce data.

26. The data preprocessor of claim 24, wherein the non-linear model includes a
5 set of model parameters defining a representation of the electronic commerce system,
wherein said model parameters of said non-linear model have been trained to represent said
electronic commerce system;

wherein the input electronic commerce data comprise run-time electronic commerce
data, and wherein said reconciled electronic commerce data comprise reconciled run-time
10 electronic commerce data; and

wherein the non-linear model is operable to receive said reconciled run-time
electronic commerce data and generate run-time output electronic commerce data, wherein
said run-time output electronic commerce data comprise one or both of control parameters
for said system and predictive output information for said system.

15 27. The data preprocessor of claim 26, wherein the input electronic commerce
data associated with at least one of the inputs has missing electronic commerce data in an
associated independent variable sequence; and

wherein said merge device is operable to reconcile said input electronic commerce
20 data to fill in said missing electronic commerce data.

25 28. The data preprocessor of claim 24, wherein the input electronic commerce
data associated with a first one or more of the inputs has an associated independent variable
sequence based on a first interval, and a second one or more of the inputs has an associated
independent variable sequence based on a second interval; and

30 wherein said merge device is operable to reconcile said input electronic commerce
data associated with said first one or more of the inputs to said input electronic commerce
data associated with said second one or more of the inputs, thereby generating reconciled
input electronic commerce data associated with said first one or more of the inputs having
an associated independent variable sequence based on said second interval.

29. The data preprocessor of claim 24, wherein a first one or more of the inputs has an associated independent variable sequence based on a first interval, and wherein the input electronic commerce data associated with a second one or more of the inputs has an associated independent variable sequence based on a second interval; and

5 wherein said merge device is operable to reconcile said input electronic commerce data associated with said first one or more of the inputs and said input electronic commerce data associated with said second one or more of the inputs to an independent variable scale based on a third interval, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs and said second one or more of the inputs 10 having an associated independent variable sequence based on said third interval.

15 30. The data preprocessor of claim 24, wherein the input electronic commerce data associated with a first one or more of the inputs is asynchronous with respect to an independent variable, and wherein the input electronic commerce data associated with a second one or more of the inputs is synchronous with an associated independent variable sequence based on an interval; and

20 wherein said merge device is operable to reconcile said asynchronous input electronic commerce data associated with said first one or more of the inputs to said synchronous input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs, and wherein said reconciled input electronic commerce data comprise synchronous input electronic commerce data having an associated independent variable sequence based on said interval.

25 31. A method for preprocessing input electronic commerce data prior to input to a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated with a portion of the input electronic commerce data, the method comprising:

30 receiving and storing the input electronic commerce data, the input electronic commerce data associated with at least two of the inputs being on different time scales relative to each other;

time merging the input electronic commerce data for the inputs such that all of the input electronic commerce data are reconciled to the same time scale; and

5 outputting the reconciled time merged electronic commerce data as reconciled electronic commerce data, the reconciled electronic commerce data comprising the input electronic commerce data for the non-linear model.

32. The method of claim 31, wherein the non-linear model comprises a non-linear model having a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained; and

10 wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said reconciled electronic commerce data comprise reconciled training electronic commerce data including reconciled target input electronic commerce data and reconciled target output electronic commerce data, and wherein said reconciled target input electronic commerce data and reconciled target output electronic commerce data are both based on a common time scale;

15 the method further comprising:

20 training the non-linear model according to a predetermined training algorithm applied to said reconciled target input electronic commerce data and said reconciled target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the target input electronic commerce data.

25 33. The method of claim 31, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, wherein said model parameters of said non-linear model have been trained to represent said system; and

30 wherein the input electronic commerce data comprise run-time electronic commerce data, and wherein said reconciled electronic commerce data comprise reconciled run-time electronic commerce data;

the method further comprising:

inputting said reconciled run-time electronic commerce data into the non-linear model to generate run-time output electronic commerce data, wherein said run-time output electronic commerce data comprise one or both of control parameters for said system and predictive output information for said system.

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34. The method of claim 33, wherein said control parameters are usable to determine control inputs to said system for run-time operation of said system.

10 35. The method of claim 31, wherein the input electronic commerce data associated with at least one of the inputs has missing electronic commerce data in an associated time sequence; and

15 wherein said time merging comprises:

reconciling said input electronic commerce data to fill in said missing electronic commerce data.

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36. The method of claim 31, wherein the input electronic commerce data associated with a first one or more of the inputs has an associated time sequence based on a first time interval, and a second one or more of the inputs has an associated time sequence based on a second time interval; and

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wherein said time merging comprises:

reconciling said input electronic commerce data associated with said first one or more of the inputs to said input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said at least one of the inputs having an associated time sequence based on 25 said second time interval.

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37. The method of claim 31, wherein the input electronic commerce data associated with a first one or more of the inputs has an associated time sequence based on a first time interval, and wherein the input electronic commerce data associated with a second one or more of the inputs has an associated time sequence based on a second time interval; and

wherein said time merging comprises:

reconciling said input electronic commerce data associated with said first one or more of the inputs and said input electronic commerce data associated with said second one or more of the inputs to a time scale based on a third time interval, thereby 5 generating reconciled input electronic commerce data associated with said first one or more of the inputs and said second one or more of the inputs having an associated time sequence based on said third time interval.

38. The method of claim 31, wherein the input electronic commerce data 10 associated with a first one or more of the inputs is asynchronous, and wherein the input electronic commerce data associated with a second one or more of the inputs is synchronous with an associated time sequence based on a time interval; and

wherein said time merging comprises:

reconciling said asynchronous input electronic commerce data associated 15 with said first one or more of the inputs to said synchronous input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs, wherein said reconciled input electronic commerce data comprise synchronous input electronic commerce data having an associated time sequence based on said time interval.

20 39. The method of claim 31, wherein said receiving and storing the input electronic commerce data comprise:

arranging the input electronic commerce data in a predetermined format.

25 40. The method of claim 39, wherein, prior to said arranging in said predetermined format, the input electronic commerce data has a predetermined time reference for all electronic commerce data, such that each piece of input electronic commerce data has associated therewith a time value relative to said predetermined time reference.

30 41. The method of claim 31, wherein each piece of electronic commerce data

has associated therewith a time value corresponding to the time the input electronic commerce data was generated.

42. The method of claim 31, further comprising:

5 applying a predetermined algorithm to the input electronic commerce data received by said input buffer prior to said time merging.

43. The method of claim 42, wherein each piece of electronic commerce data has associated therewith a time value corresponding to the time the input electronic commerce data was generated.

10 44. The method of claim 42, further comprising:

selecting said predetermined algorithm from a group of available algorithms.

15 45. The method of claim 31, further comprising:

applying a predetermined algorithm to the reconciled time merged electronic commerce data prior to outputting said reconciled time merged electronic commerce data.

20 46. The method of claim 45, further comprising:

an input device for selecting said predetermined algorithm from a group of available algorithms.

47. The method of claim 31, wherein the input electronic commerce data comprise a plurality of variables, each of the variables comprising an input variable with an associated set of electronic commerce data wherein each of said variables comprises an input to said input buffer; and

25 wherein each of at least a subset of said variables comprises a corresponding one of the inputs to the non-linear model.

30 48. The method of claim 47, further comprising:

receiving reconciled electronic commerce data associated with a select one of said

input variables; and

introducing a predetermined amount of delay to said reconciled electronic commerce data to output a delayed input variable and associated set of delayed reconciled input electronic commerce data.

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49. The method of claim 48, wherein said predetermined amount of delay is a function of an external variable, the method further comprising:

varying said predetermined amount of delay as a function of said external variable.

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50. The method of claim 48, further comprising:

learning said predetermined delay as a function of training parameters generated by the electronic commerce system modeled by the non-linear model.

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51. The method of claim 31, further comprising:

a graphical user interface (GUI) receiving user input specifying one or more electronic commerce data manipulation and/or reconciliation operations to be performed on said input electronic commerce data.

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52. The method of claim 51, further comprising:

the GUI displaying said input electronic commerce data prior to and after performing said manipulation and/or reconciliation operations on said input electronic commerce data.

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53. The method of claim 51, further comprising:

the GUI receiving user input specifying a portion of said input electronic commerce data for said electronic commerce data manipulation and/or reconciliation operations.

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54. A method for preprocessing input electronic commerce data for a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated with a portion of the input electronic commerce data, comprising:

receiving and storing the input electronic commerce data, the input electronic commerce data associated with at least two of the inputs being on different independent variable scales relative to each other;

5 reconciling the input electronic commerce data stored in the input buffer such that all of the input electronic commerce data for all of the inputs are on the same independent variable scale to generate reconciled electronic commerce data; and

outputting reconciled electronic commerce data, said reconciled electronic commerce data comprising the input electronic commerce data to the non-linear model.

10 55. The method of claim 54, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained; and

15 wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said reconciled electronic commerce data comprise reconciled training electronic commerce data including reconciled target input electronic commerce data and reconciled target output electronic commerce data, and wherein said reconciled target input electronic commerce data and reconciled target output electronic commerce data are both based on a common independent variable scale;

20 the method further comprising:

25 training the non-linear model according to a predetermined training algorithm applied to said reconciled target input electronic commerce data and said reconciled target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the target input electronic commerce data.

30 56. The method of claim 54, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, wherein said model parameters of said non-linear model have been trained to represent said system; and

wherein the input electronic commerce data comprise run-time electronic commerce

data, and wherein said reconciled electronic commerce data comprise reconciled run-time electronic commerce data;

the method further comprising:

5 inputting said reconciled run-time electronic commerce data into the non-linear model to generate run-time output electronic commerce data, wherein said run-time output electronic commerce data comprise one or both of control parameters for said system and predictive output information for said system.

10 57. The method of claim 56, wherein the input electronic commerce data associated with at least one of the inputs has missing electronic commerce data in an associated independent variable sequence; and

wherein said merging comprises:

15 reconciling said input electronic commerce data to fill in said missing electronic commerce data.

15 58. The method of claim 54, wherein the input electronic commerce data associated with a first one or more of the inputs has an associated independent variable sequence based on a first interval, and a second one or more of the inputs has an associated independent variable sequence based on a second interval; and

20 wherein said merging comprises:

20 reconciling said input electronic commerce data associated with said first one or more of the inputs to said input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs having an associated independent variable sequence based on said second interval.

25 59. The method of claim 54, wherein a first one or more of the inputs has an associated independent variable sequence based on a first interval, and wherein the input electronic commerce data associated with a second one or more of the inputs has an associated independent variable sequence based on a second interval; and

30 wherein said merging comprises:

reconciling said input electronic commerce data associated with said first one or more of the inputs and said input electronic commerce data associated with said second one or more of the inputs to an independent variable scale based on a third interval, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs and said second one or more of the inputs having an associated independent variable sequence based on said third interval.

60. The method of claim 54, wherein the input electronic commerce data associated with a first one or more of the inputs is asynchronous with respect to an independent variable, and wherein the input electronic commerce data associated with a second one or more of the inputs is synchronous with an associated independent variable sequence based on an interval; and

wherein said merging comprises:

reconciling said asynchronous input electronic commerce data associated with said first one or more of the inputs to said synchronous input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs, and wherein said reconciled input electronic commerce data comprise synchronous input electronic commerce data having an associated independent variable sequence based on said interval.

20 61. A system for preprocessing input electronic commerce data for a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated with a portion of the input electronic commerce data, comprising:

25 means for receiving and storing the input electronic commerce data, the input electronic commerce data associated with at least two of the inputs being on different independent variable scales relative to each other;

means for reconciling the input electronic commerce data stored in the input buffer such that all of the input electronic commerce data for all of the inputs are on the same 30 independent variable scale to generate reconciled electronic commerce data; and

means for outputting reconciled electronic commerce data, said reconciled electronic

commerce data comprising the input electronic commerce data to the non-linear model.

62. The system of claim 61, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained; and

5 wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said reconciled electronic commerce data comprise reconciled training electronic commerce data including reconciled target input electronic commerce data and reconciled target output electronic commerce data, and wherein said reconciled target input electronic commerce data and reconciled target output electronic commerce data are both based on a common independent variable scale;

10 the system further comprising:

15 means for training the non-linear model according to a predetermined training algorithm applied to said reconciled target input electronic commerce data and said reconciled target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the target input electronic commerce data.

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63. The system of claim 61, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, wherein said model parameters of said non-linear model have been trained to represent said electronic commerce system; and

25 wherein the input electronic commerce data comprise run-time electronic commerce data, and wherein said reconciled electronic commerce data comprise reconciled run-time electronic commerce data;

30 the system further comprising:

means for inputting said reconciled run-time electronic commerce data into the non-linear model to generate run-time output electronic commerce data, wherein said run-time output electronic commerce data comprise one or both of control parameters for

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said electronic commerce system and predictive output information for said electronic commerce system.

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64. The system of claim 63, wherein the input electronic commerce data associated with at least one of the inputs has missing electronic commerce data in an associated independent variable sequence; and

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wherein said means for merging comprises:

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means for reconciling said input electronic commerce data to fill in said missing electronic commerce data.

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65. The system of claim 61, wherein the input electronic commerce data associated with a first one or more of the inputs has an associated independent variable sequence based on a first interval, and a second one or more of the inputs has an associated independent variable sequence based on a second interval; and

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wherein said means for merging comprises:

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means for reconciling said input electronic commerce data associated with said first one or more of the inputs to said input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs having an associated independent variable sequence based on said second interval.

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66. The system of claim 61, wherein a first one or more of the inputs has an associated independent variable sequence based on a first interval, and wherein the input electronic commerce data associated with a second one or more of the inputs has an associated independent variable sequence based on a second interval; and

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wherein said means for merging comprises:

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means for reconciling said input electronic commerce data associated with said first one or more of the inputs and said input electronic commerce data associated with said second one or more of the inputs to an independent variable scale based on a third interval, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs and said second one or more of the inputs having an

associated independent variable sequence based on said third interval.

67. The system of claim 61, wherein the input electronic commerce data associated with a first one or more of the inputs is asynchronous with respect to an independent variable, and wherein the input electronic commerce data associated with a second one or more of the inputs is synchronous with an associated independent variable sequence based on an interval; and

5 wherein said means for merging comprises:

10 means for reconciling said asynchronous input electronic commerce data associated with said first one or more of the inputs to said synchronous input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs, and wherein said reconciled input electronic commerce data comprise synchronous input electronic commerce data having an associated independent variable sequence based 15 on said interval.

68. A carrier medium which stores program instructions for preprocessing input electronic commerce data prior to input to a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the 20 inputs associated with a portion of the input electronic commerce data, wherein said program instructions are executable to:

receive and store the input electronic commerce data, wherein the input electronic commerce data associated with at least two of the inputs are on different time scales relative to each other;

25 time merge the input electronic commerce data for the inputs such that all of the input electronic commerce data are reconciled to the same time scale; and

output the reconciled time merged electronic commerce data as reconciled electronic commerce data, the reconciled electronic commerce data comprising the input electronic commerce data to the non-linear model.

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69. The carrier medium of claim 68, wherein the non-linear model includes a set

of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained; and

wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said reconciled electronic commerce data comprise reconciled training electronic commerce data including reconciled target input electronic commerce data and reconciled target output electronic commerce data, and wherein said reconciled target input electronic commerce data and reconciled target output electronic commerce data are both based on a common time scale;

10 wherein said program instructions are further executable to:

train the non-linear model according to a predetermined training algorithm applied to said reconciled target input electronic commerce data and said reconciled target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the target input electronic commerce data.

20 70. The carrier medium of claim 68, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, wherein said model parameters of said non-linear model have been trained to represent said electronic commerce system; and

wherein the input electronic commerce data comprise run-time electronic commerce data, and wherein said reconciled electronic commerce data comprise reconciled run-time electronic commerce data;

25 wherein said program instructions are further executable to:

input said reconciled run-time electronic commerce data into the non-linear model to generate run-time output electronic commerce data, wherein said run-time output electronic commerce data comprise one or both of control parameters for said system and predictive output information for said system.

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71. The carrier medium of claim 70, wherein said control parameters are usable

to determine control inputs to said system for run-time operation of said system.

72. The carrier medium of claim 68, wherein the input electronic commerce data associated with at least one of the inputs has missing electronic commerce data in an associated time sequence; and

5 wherein in performing said time merging said program instructions are further executable to:

reconcile said input electronic commerce data to fill in said missing electronic commerce data.

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73. The carrier medium of claim 68, wherein the input electronic commerce data associated with a first one or more of the inputs has an associated time sequence based on a first time interval, and a second one or more of the inputs has an associated time sequence based on a second time interval; and

15 wherein in performing said time merging said program instructions are further executable to:

reconcile said input electronic commerce data associated with said first one or more of the inputs to said input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said at least one of the inputs having an associated time sequence based on said second time interval.

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74. The carrier medium of claim 68, wherein the input electronic commerce data associated with a first one or more of the inputs has an associated time sequence based on a first time interval, and wherein the input electronic commerce data associated with a second one or more of the inputs has an associated time sequence based on a second time interval; and

25 wherein in performing said time merging said program instructions are further executable to:

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reconcile said input electronic commerce data associated with said first one or more of the inputs and said input electronic commerce data associated with said second

one or more of the inputs to a time scale based on a third time interval, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs and said second one or more of the inputs having an associated time sequence based on said third time interval.

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75. The carrier medium of claim 68, wherein the input electronic commerce data associated with a first one or more of the inputs is asynchronous, and wherein the input electronic commerce data associated with a second one or more of the inputs is synchronous with an associated time sequence based on a time interval; and

10 wherein in performing said time merging said program instructions are further executable to:

15 reconcile said asynchronous input electronic commerce data associated with said first one or more of the inputs to said synchronous input electronic commerce data associated with said second one or more of the inputs, thereby generating reconciled input electronic commerce data associated with said first one or more of the inputs, wherein said reconciled input electronic commerce data comprise synchronous input electronic commerce data having an associated time sequence based on said time interval.

20 76. The carrier medium of claim 68, wherein in performing said receiving and storing said program instructions are further executable to:

arrange the input electronic commerce data in a predetermined format.

25 77. The carrier medium of claim 76, wherein, prior to said arranging in said predetermined format, the input electronic commerce data has a predetermined time reference for all electronic commerce data, such that each piece of input electronic commerce data has associated therewith a time value relative to said predetermined time reference.

30 78. The carrier medium of claim 68, wherein each piece of electronic commerce data has associated therewith a time value corresponding to the time the input electronic commerce data was generated.

79. The carrier medium of claim 68, wherein said program instructions are further executable to:

5 apply a predetermined algorithm to the input electronic commerce data prior to said performing said time merging.

80. The carrier medium of claim 79, wherein each piece of electronic commerce data has associated therewith a time value corresponding to the time the input electronic commerce data was generated.

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81. The carrier medium of claim 79, wherein said program instructions are further executable to:

select said predetermined algorithm from a group of available algorithms.

15 82. The carrier medium of claim 68, wherein said program instructions are further executable to:

apply a predetermined algorithm to the reconciled time merged electronic commerce data prior to outputting said reconciled time merged electronic commerce data.

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83. The carrier medium of claim 82, wherein said program instructions are further executable to:

select said predetermined algorithm from a group of available algorithms.

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84. The carrier medium of claim 68, wherein the input electronic commerce data comprise a plurality of variables, each of the variables comprising an input variable with an associated set of electronic commerce data wherein each of said variables comprises an input to said input buffer; and

wherein each of at least a subset of said variables comprises a corresponding one of the inputs to the non-linear model.

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85. The carrier medium of claim 84, wherein said program instructions are

further executable to:

receive reconciled electronic commerce data associated with a select one of said input variables; and

introduce a predetermined mount of delay to said reconciled electronic commerce data and output a delayed input variable and associated set of delayed reconciled input electronic commerce data.

86. The carrier medium of claim 85, wherein said predetermined amount of delay is a function of an external variable, wherein said program instructions are further executable to:

10 vary said predetermined amount of delay as a function of said external variable.

87. The carrier medium of claim 85, wherein said program instructions are further executable to:

15 learn said predetermined delay as a function of training parameters generated by the electronic commerce system modeled by the non-linear model.

88. The carrier medium of claim 68, wherein said program instructions are further executable to present a graphical user interface (GUI), wherein said GUI is operable 20 to receive user input specifying one or more electronic commerce data manipulation and/or reconciliation operations to be performed on said input electronic commerce data.

89. The carrier medium of claim 88, wherein said GUI is further operable to display said input electronic commerce data prior to and after performing said manipulation 25 and/or reconciliation operations on said input electronic commerce data.

90. The carrier medium of claim 88, wherein said GUI is further operable to receive user input specifying a portion of said input electronic commerce data for said electronic commerce data manipulation and/or reconciliation operations.